DOCUMENT RESUME

ED 209 697 CS 503 651

AUTHOR Strube, Michael J.; Werner, Carol
TITLE Sex Differences in Appropriateness of Communication through Multiple Nonverbal Channels.
PUB DATE Aug 81
NOTE 18p.; Paper presented at the Annual Meeting of the American Psychological Association (89th, Los Angeles, CA, August 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Students; *Communication Research; *Communication Skills; Females; Higher Education; Interaction Process Analysis; *Interpersonal Relationship; Males; *Nonverbal Communication; *Sex Differences

ABSTRACT

A study investigated the use of nonverbal cues by male and female subjects during relatively pleasant and unpleasant interactions. Five nonverbal behaviors found to be effective in controlling both the quantity and the quality of interactions were examined: gaze, smiling, arm position, interpersonal distance, and personal space. It was expected that females would exhibit more appropriate use of nonverbal cues, but that this advantage would be limited to a favorable, open interaction. The 40 male and 40 female college students participating in the study were instructed to establish a pleasant or to avoid an unpleasant interaction with a male or female stranger. Results showed that women used nonverbal cues more appropriately and in more congruent patterns than did men, but only when endeavoring to be pleasant. Men were somewhat more appropriate and congruent in their nonverbal cues when avoiding unpleasant interaction. The results qualified previous findings that women were better encoders of nonverbal information and suggested that the purpose of the communication is an important mediator. (RL)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED209697

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

# Sex Differences in Appropriateness of Communication through Multiple Nonverbal Channels

Michael J. Strube and Carol Werner

University of Utah

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Michael J. Strube
Carol Werner
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Running Head: Sex Differences in Nonverbal Communication

This article is based on a thesis submitted by the first author to the University of Utah in partial fulfillment of the requirements for the Master of Science degree. Thanks are extended to thesis committee members Irwin Altman and Martin M. Chemers for their help and guidance throughout the project, and to Carol Dye and Craig Bunker who served as confederates.

Reprint requests should be addressed to Michael J. Strube, Department of Psychology, University of Utah, Salt Lake City, Utah, 84112.

CSS0365-1

# Sex Differences in Appropriateness of Communication through Multiple Nonverbal Channels

Considerable research evidence indicates that women are better decoders and encoders of nonverbal cues than men (e.g., Hall, 1978, 1979; Rosenthal & DePaulo, 1979b). For example, Hall (Note 1, 1978) has reviewed the results of 26 tests of encoding differences and 75 tests of decoding differences and found that females have a substantial advantage in their ability to send and receive clear nonverbal messages. Given that greater nonverbal skills have been found to be associated with more effective interpersonal relationships (cf. Hall, Rosenthal, Archer, DiMatteo, & Rogers, 1978; Rosenthal, Hall, Archer, DiMatteo, & Rogers, 1979), it seems that women hold an important edge in their transactions with others. However, recent evidence (e.g., Rosenthal & DePaulo, 1979b) indicates that enhanced skill at decoding can be a detriment to smooth interpersonal functioning, particularly when revealing nonverbal cues are unintentionally "leaked." In a similar vein, it may be that the enhanced encoding abilities of women are also limited.

It has been suggested that greater decoding and encoding by women stems from child rearing practices that encourage girls to be emotionally expressive and attentive to nonverbal cues (Buck, 1975, 1977; Buck, Savin, Miller, & Caul, 1972). Further, women traditionally have played more supportive, socio-emotional roles than men in our culture (Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Parsons, 1955; Parsons, Bales, & Shils, 1953) and have also been found to be more polite (see Rosenthal & DePaulo, 1979a). For example, in verbal interactions, women are more likely to concur with others (Strodtbeck & Mann, 1956), offer the speaker more supportive "backchanneling" (Crosby, 1976; Dittmann, 1972), and provide smoother turn-taking transitions

(Crosby, 1976). On the other hand, men have been found to be more argumentative and antagonistic (Hirschman, Note 2; Strodtbeck & Mann, 1956). Similarly, men are more likely to interrupt the speaker (Henley, 1975; Zimmerman & West, 1975).

Women have also been found to be more polite in their use of nonverbal cues. For example, women look (Argyle & Cook, 1976) and smile (Duncan & Fiske, 1977) at others more than men, and also exhibit more relaxed postures (Mehrabian, 1972). More importantly, women exhibit such nonverbal politeness even when told to avoid seeking approval (Rosenfeld, 1966) or to act competitively (Vinacke & Gullickson, 1964). Taken together, these findings, along with those for verbal politeness, suggest that while women may send clearer messages than men, they may not send the most appropriate message. Because of their overall tendency to be polite, women may not be any more capable than men of communicating a "negative" message, such as a desire to end an interaction, and in fact, may communicate an inappropriate message signaling openness.

The present study investigated the use of nonverbal cues by male and female subjects during relatively pleasant and unpleasant interactions. Five nonverbal behaviors that have been found to be effective in controlling both the quantity and quality of interactions were examined: gaze, smiling, arm position, interpersonal distance (i.e., metric measure between two people), and personal space (i.e., area around the body characterized by subjective ownership) (see Altman, 1975; Ekman & Friesen, 1969, 1974, 1975). The focus on nonverbal behaviors stemmed from findings indicating that the encoding advantage held by females is limited primarily to the visual modality (Hall, 1979).

The present study also deviated from past encoding investigations in three important ways. First, interpersonal intentions during actual interactions

were the basis for the nonverbal communication. This is in contrast to previous studies where actors are asked to produce nonverbal cues representing a particular emotion or intention, which is then videotaped for viewing by judges (cf. Hall, 1979). Second, the present investigation focused attention on appropriateness, not accuracy, of nonverbal use. Specifically, while females may be able to send "clearer" messages, they may not send the most appropriate message. As a result, judges were not used since appropriateness can be determined a priori, based on previous research (e.g., gaze and smile signal openness and a willingness to interact while their converse signal an unwillingness to interact, e.g., Argyle, Ingham, Alkema, & McCallin, 1973; Kraut & Johnston, 1979) Finally, the simultaneous use of multiple nonverbal cues was investigated to examine the possibility that one reason women are easier to read is that they communicate the same message through several channels.

Based on the above discussion, it was expected that females would exhibit more appropriate use of nonverbals (i.e., using nonverbals appropriate to the nature of the interaction), but that this advantage would be limited to a favorable, open interaction. Furthermore, this effect was expected to be exhibited in the use of nonverbal cues individually and in combinations.

## Method

### Subjects

Subjects were 80 (40 male, 40 female) undergraduate volunteers with a mean age of 20 years.

### Confederates

Two undergraduates (1 male, 1 female) of average height, weight, and appearance served as confederates.

Procedure

A 2(Sex of Subject) x 2(Interaction Type) x 2(Sex of Confederate) factorial design was used with subjects randomly assigned to the latter two treatments. Subjects participated in a study of characteristics of interpersonal interactions. Each subject was told that s/he would interact with another subject (actually a confederate) to permit the investigator to examine the different ways interactions were carried out. Subjects were then given instructions designed to alter their interpersonal strategies during the interaction.

Half of the subjects were told that they would participate in a sales interaction where they would assume the role of a salesperson and attempt to sell another subject (actually a confederate) two expensive raffle tickets. It was explained that the investigator was interested in this interaction because salespeople claim they can sell anything, even difficult items like raffle tickets, by taking control over the customer and the interaction. Subjects were then told that the other subject would be uncooperative. In this way, the experimenter would be able to judge the effectiveness of the tactics of each subject. The roles were reversed for the remaining subjects, with instructions to avoid the sales attempt of the other subject. The same rationale was given. (The choice of the sales interaction was also dictated by interest in personality variables related to threat, see Strube & Werner, Note 3.) Thus, in one situation, the subject would attempt to establish an "open" positive relationship, while in the other s/he would attempt to avoid such a relationship. These expectations were hypothesized to affect the subsequent use of nonverbal cues.

Manipulation Check

To check on the subject's comprehension of the instructions, the ex-

perimenter asked for a verbal reiteration and clarified points of confusion. Two pilot studies and the actual investigation indicated that the interaction provided a familiar situation where the importance of control and favorableness were clear, and which was involving to subjects.

The subject was led to a room where the waiting confederate was positioned 4.88 meters from the door. Immediately upon entering the room, the subject approached the confederate to begin the interaction. Concomitantly, the experimenter noted whether the subject crossed his/her arms, and the confederate noted the occurrence of a smile or the aversion of gaze. These nonverbals were operationalized in a simple manner and measured at the beginning of the interaction to insure high reliability. No videotape equipment or observers were present in the room to insure unobtrusive measurement and to avoid distraction.[1]

As soon as the subject stopped walking, the experimenter intervened and measured each participant's personal space. Using a procedure adapted from Edney (1975; Edney, Walker, & Jordan, 1976), the experimenter placed a marker where each was standing to provide a point of reference (this also allowed unobtrusive measurement of initial interpersonal distance) and had the subject map out his/her personal space by laying down a string so that it enclosed the space s/he felt was exclusively his/hers. The confederate then mapped his/her space. Next the subject and confederate were asked to complete questionnaires measuring first impressions and reactions. The confederate actually recorded the gaze and smiling data and checked a code sheet indicating the role s/he would assume (s/he had been blind to condition prior to this point).

Following completion of the questionnaire, the subject and confederate resumed the interaction. After two minutes, the experimenter intervened and

marked the final positions of the participants (the confederate had not moved). The subject was debriefed and excused.

## Results

Preliminary analyses indicated no significant effects for sex of confederate, thus results are collapsed across that factor. No sex differences were found for interpersonal distance or personal space. Main effects of type of interaction were obtained and are described in detail elsewhere (Strube & Werner, Note 3). Briefly, the favorable interaction was characterized by closer interpersonal distances and smaller personal spaces than the unfavorable interaction. These findings are consistent with previous research (see Altman, 1975). The following presentation focuses on the three nonverbals (gaze, smile, arm cross) that represent clear communication cues and which can be unambiguously classified as appropriate/inappropriate within the two interactions.[2]

To address the hypotheses, each subject was given an appropriateness "score" for their use of each nonverbal. If nonverbal use was appropriate to their instructed goal in the situation, a "+1" was assigned; if it was inappropriate, a "-1" was assigned. In the interaction where subjects were told to attempt to establish an "open" interaction, the maintenance of gaze, presence of a smile, and lack of arm cross were each scored as +1, while gaze aversion, no smile, and arm cross were scored as -1. The reverse scoring was used in the "avoid" interaction. To provide an indication of congruence of usage across channels, subject's appropriateness scores were summed. In all cases, positive scores indicate appropriate use of nonverbals and negative scores indicate inappropriate use. Large numbers indicate congruence, and small numbers (i.e., close to zero) indicate a lack of congruence.

Data were analyzed by two separate 2(Sex of Subject) x 2(Interaction Type)

analyses of variance -- once for the appropriateness of single nonverbals, and once for the congruence and appropriateness of nonverbal combinations. Results for single nonverbals revealed no overall sex differences, although females ($M$ = .45) had a tendency to smile more appropriately than males ($M$ = .1), $F(1,76) = 3.29$, $p < .10$. Across sex of subject, the favorable interaction produced more appropriate use of smiling ($M$ = .50) and arm crossing ($M$ = .85), than the less favorable interaction ($M$ = .05, $M$ = -.05; $F(1,76) = 5.38$, $p < .05$, $F(1,76) = 25.30$, $p < .001$). However, these results were qualified by significant interactions. As expected, appropriateness of nonverbals depended on the situation as well as the sex of subject for both smiling ($F(1,76) = 11.28$, $p < .005$) and gaze ($F(1,76) = 4.66$, $p < .05$). Females were more appropriate than males when trying to establish an open relationship, while the reverse tended to be true when trying to avoid an unfavorable interaction (see Table 1). Tests for sex differences within interaction type indicated that only the differences within the favorable condition were significant ($p$'s < .05).

---

Insert Table 1 about here

---

Analyses of combinations of nonverbals (Altman, 1977; Keiser & Altman, 1976) indicated results similar to single nonverbal usage. Females showed a tendency to use multiple nonverbal channels in a more congruent pattern than males, and the favorable situation produced more congruence than the unfavorable condition. However, these results were largely due to the highly congruent use of multiple nonverbals by females attempting to establish a favorable, open interaction (see Table 1). The sex by interaction type effects were significant for each nonverbal combination ($p$'s < .05). Tests of sex differences within each interaction type indicated that, as with single non-

verbals, females had an encoding "advantage" only under favorable circumstances.[3]

## Discussion

Results supported the hypothesis that females are more appropriate encoders of nonverbal cues than males only in situations where one must communicate a message of "openness." Such an advantage was found to occur with respect to single nonverbals, and combinations, suggesting that one reason females are easier to "read" is that they communicate an appropriate message through several channels. In this respect, females are more interpersonally accommodating in terms of encoding as well as decoding (cf. Rosenthal & DePaulo, 1979).

The results also indicated an interesting pattern in the unfavorable interaction. While no single male-female comparison was significant, males were more appropriate and congruent across all nonverbals. Thus, females were less able to communicate clearly a message of resistance. In fact, females often exhibited nonverbals not appropriate to the goal of avoiding interaction (cf. Beekman, 1976; Rosenfeld, 1966). Perhaps males are socialized to be more defensive and aggressive, and so are better able to communicate defensiveness or resistance. Future research should explore this possibility.

It should be pointed out that the present investigation focused on three nonverbals measured over a brief period of time. Although the face and body have been shown to be very powerful nonverbal sources, other communication channels (e.g., verbal quality and quantity) are also important. In addition, the use of communication over time deserves attention. Given that communication channels can be used in complex patterns (e.g., Keiser & Altman, 1976; Strube & Werner, Note 3), it is important for future research to extend investigation to other message sources.

A final note concerns the definition of appropriate/inappropriate used to

describe nonverbal usage during favorable and unfavorable interactions. While objectively, the presence of a smile, the maintenance of gaze, and the lack of crossed arms are indicative of openness and their converse indicative of resistance, there is no guarantee they will actually be decoded and interpreted correctly. Research not only shows an accuracy difference in decoding between the sexes, but an attentional focus difference as well. At least for college samples, males appear to focus on the positive aspects of behavior while females focus on the negative (cf. Rosenthal & DePaulo, 1979; Vinsel, Note 4). As a result, the impression formed during an interaction may differ depending on whether a male or female is decoding the messages. In addition, males and females may exhibit the same nonverbals under different circumstances. For example, Beekman (1976) has found that women smile more than men in a stressful situation. It is likely that such a cue will be misinterpreted by males relative to females given different experiences (i.e., males don't smile when stressed, so they are less likely to interpret it as stress). Interpretation, as well as decoding, differences probably interact in important ways with encoding differences.

In summary, the present investigation demonstrated that the encoding advantage attributed to females may be limited to favorable, "open" interactions, and that males might have a slight advantage when communicating a more resistant or avoidance-related message.

## Reference Notes

1. Hall, J. A. Gender effects in encoding nonverbal cues. Paper submitted for publication, 1978.

2. Hirschmann, L. Male-Female differences in conversational interaction. Paper presented at Linguistic Society of America, December, 1973.

3. Strube, M. J., & Werner, C. Interpersonal control and the Type A coronary-prone behavior pattern. Paper submitted for publication, 1981.

4. Vinsel, A. Judgements of an actress in cross-sex interactions: Patterns of evaluation and sex differences. Unpublished Master's thesis, University of Utah, 1980.

References

Altman, I. The environment and social behavior: Privacy, personal space, territory, crowding. Monterey, Calif.: Brooks/Cole, 1975.

Altman, I. Research on environment and behavior: A personal statement of strategy. In D. Stokols (Ed.), Perspectives on environment and behavior. N.Y.: Plenum, 1977, 303-333.

Argyle, M., & Cook, M. Gaze and mutual gaze. Cambridge: Cambridge University Press, 1976.

Argyle, M., Ingham, R., Alkema, F., & McCallin, M. The different functions of gaze. Semiotica, 1973, 7, 19-32.

Beekman, S. Sex differences in nonverbal behavior. Unpublished manuscript cited in S. Weitz, Sex differences in nonverbal communication. Sex Roles, 1976, 2, 175-184.

Broverman, I. K., Vogel, S. R., Broverman, D. M., Clarkson, F. E., & Rosenkrantz, P. S. Sex role stereotypes: A current appraisal. Journal of Social Issues, 1972, 28, 59-78.

Buck, R. Nonverbal communication of affect in children. Journal of Personality and Social Psychology, 1975, 31, 644-653.

Buck, R. Nonverbal communication of affect in preschool children: Relationships with personality and skin conductance. Journal of Personality and Social Psychology, 1977, 35, 225-236.

Buck, R., Savin, U., Miller, R., & Caul, W. Communication of affect through facial expression in humans. Journal of Personality and Social Psychology, 1972, 23, 362-371.

Crosby, F. The effect of mode of interaction, sex, and acquaintance on conversation management. Unpublished manuscript reported in R. Rosenthal &

B. M. DePaulo, Sex differences in accommodation in nonverbal communication, In R. Rosenthal (Ed.), Skill in nonverbal communication. Cambridge, Mass.: Oelgeschlager, Gunn, & Hain, 1979.

Dittmann, A. T. Developmental factors in conversational behavior. Journal of Communication, 1972, 22, 404-423.

Duncan, S. Jr., & Fiske, D. W. Face-to-face interaction: Research, methods, and theory. Hillsdale, N.J.: Erlbaum, 1977.

Edney, J. J. Territoriality and control: A field experiment. Journal of Personality and Social Psychology, 1975, 31, 1108-1115.

Edney, J. J., Walker, C. A., & Jordan, N. L. Is there reactance in personal space? Journal of Social Psychology, 1976, 100, 207-217.

Ekman, P., & Friesen, W. V. Nonverbal leakage and clues to deception. Psychiatry, 1969, 32, 88-106.

Ekman, P., & Friesen, W. V. Detecting deception from the body or face. Journal of Personality and Social Psychology, 1974, 29, 288-298.

Ekman, P., & Friesen, W. V. Unmasking the face. Englewood Cliffs, N.J.: Prentice-Hall, 1975.

Hall, J. A. Gender effects in decoding nonverbal cues. Psychological Bulletin, 1978, 68, 807-816.

Hall, J. A. Gender, gender roles, and nonverbal communication skills. In R. Rosenthal (Ed.), Skill in nonverbal communication. Cambridge, Mass.: Oelgeschlager, Gunn, & Hain, 1979.

Hall, J. A., Rosenthal, R., Archer, D., DiMatteo, M. R., & Rogers, P. L. The Profile of Nonverbal Sensitivity. In P. McReynolds (Ed.), Advances in psychological assessment (Vol. 4). San Francisco: Jossey-Bass, 1978.

Henley, N. M. Power, sex, and nonverbal communication. In B. Thorne and N. Henley (Eds.), Language and sex: Difference and dominance. Rowley,

Mass.: Newbury House, 1975.

Keiser, G., & Altman, I. Relationship of nonverbal behavior to the social penetration process. Human Communications Research, 1976, 2, 147-161.

Kraut, R. E., & Johnston, R. E. Social and emotional messages of smiling: An ethological approach. Journal of Personality and Social Psychology, 1979, 37, 1539-1553.

Mehrabian, A. Nonverbal communication. Chicago: Aldine-Atherton, 1972.

Parsons, T. The American family: Its relations to personality and to the social structure. In T. Parsons & R. F. Bales, Family, socialization, and interaction process. New York: Free Press, 1955.

Parsons, T., Bales, R. F., & Shils, E. A. Working papers in the theory of action. New York: Free Press, 1953.

Rosenfeld, H. M. Approval-seeking and approval-inducing functions of verbal and nonverbal responses in a dyad. Journal of Personality and Social Psychology, 1966, 4, 597-605.

Rosenthal, R., & DePaulo, B. M. Sex differences in accommodation in nonverbal communication. In R. Rosenthal (Ed.), Skill in nonverbal communication. Cambridge, Mass.: Oelgeschlager, Gunn, & Hain, 1979(a).

Rosenthal, R., & DePaulo, B. Sex differences in eavesdropping on nonverbal cues. Journal of Personality and Social Psychology, 1979(b), 37, 273-285.

Rosenthal, R., Hall, J. A., Archer, D., DiMatteo, M. R., & Rogers, P. L. The PONS test: Measuring sensitivity to nonverbal cues. In S. Weitz, Nonverbal communication (Rev. Ed.). New York: Oxford University Press, 1979.

Strodtbeck, F. L., & Mann, R. D. Sex role differentiation in jury deliberations. Sociometry, 1956, 19, 3-11.

Vinacke, W. E., & Gullickson, G. R. Age and sex differences in the formation of coalitions. Child Development, 1964, 35, 1217-1231.

Zimmerman, D. H., & West, C. Sex roles, interruptions and silences in conversation, In B. Thorne and N. Henley (Eds.), Language and sex: Difference and dominance. Rowley, Mass.: Newbury House, 1975.

## Footnotes

[1]Confederates and experimenter were extensively trained prior to the experiment on detection of the nonverbals. A check on the reliability during the experiment indicated no errors in detection.

[2]Interpersonal distance and personal space were not classified as appropriate/inappropriate because their continuous nature precluded unambiguous definition. Scoring these variables on the dichotomous appropriateness scale would have necessitated establishing an arbitrary cutoff point.

[3]The univariate analyses of nonverbal combinations, while conceptually important, may suffer from statistical nonindependence. For this reason, a multivariate analysis of variance was computed. Results indicated that, overall, the favorable condition produced more appropriate use of nonverbals ($F(3,74) = 11.87$, $p < .001$), but that no sex differences were evident ($F(3,74) = 1.02$, $p < .39$). More importantly, the interaction was significant ($F(3,74) = 4.512$, $p < .006$), corroborating the univariate analyses and indicating more appropriate use of nonverbals by females in the favorable interaction.

Table 1

Appropriateness and Congruence of Nonverbal Cues as a Function of Subject Sex and Interaction Type

| | Favorable Interaction | | Unfavorable Interaction | |
|---|---|---|---|---|
| | Females | Males | Females | Males |
| Single Nonverbals | | | | |
| smile | 1.0 | 0.0 | -.1 | .2 |
| gaze | .3 | -.2 | .2 | .6 |
| arm cross | .9 | .8 | -.1 | 0.0 |
| Two-Nonverbal Combinations | | | | |
| smile-gaze | 1.3 | -.2 | .1 | .5 |
| smile-arm cross | 1.9 | .8 | .2 | .2 |
| arm cross-gaze | 1.2 | .6 | .1 | .6 |
| Three-Nonverbal Combinations | | | | |
| smile-gaze-arm cross | 2.2 | .6 | 0.0 | .8 |

Note. Appropriateness is indicated by positive numbers, inappropriateness by negative numbers. Congruent utilization of nonverbal channels is indicated by larger numbers (i.e., ±1, ±2, ±3 are the maximum for the one, two, and three nonverbal combinations respectively), and incongruent utilization by small numbers (i.e., close to zero).